

one or more intermediate appliances having geometries selected to progressively reposition the teeth from the first intermediate arrangement to successive intermediate arrangements; and

a final appliance having a geometry selected to progressively reposition the teeth from the last intermediate arrangement to the final tooth arrangement, wherein the appliances comprise polymeric shells having cavities and wherein the cavities of successive shells have different geometries shaped to receive and resiliently reposition teeth from one arrangement to a successive arrangement.

Please cancel claim 2.

~~2.~~ (Amended) A system as in claim ~~[2]~~ <sup>1</sup>, wherein the tooth positions defined by the cavities in each successive appliance differ from those defined by the prior appliance by no more than 2 mm.

~~4.~~ (As filed) A system as in claim 1, comprising at least two intermediate appliances.  
~~5.~~ (As filed) A system as in claim ~~4~~ <sup>3</sup>, comprising at least ten intermediate appliances.  
~~6.~~ (As filed) A system as in claim ~~5~~ <sup>4</sup>, comprising at least twenty-five intermediate appliances.

~~6.~~ (Amended) A method for repositioning teeth from an initial tooth arrangement to a final tooth arrangement, said method comprising:  
placing a first incremental position adjustment appliance in a patient's mouth, wherein the first appliance has a geometry selected to reposition the teeth from the initial tooth arrangement to a first intermediate arrangement;  
successively replacing one or more additional appliances, wherein the additional appliances have geometries selected to progressively reposition the teeth from the first intermediate arrangement to successive intermediate arrangements; and  
placing a final appliance into the patient's mouth, wherein the final appliance has a geometry selected to progressively reposition the teeth from the last intermediate arrangement to the final tooth arrangement, wherein the appliances comprise polymeric shells

12 having cavities shaped and wherein the cavities of successive shells have difficult geometries  
13 to receive and resiliently reposition teeth from one arrangement to a successive arrangement.

1 Please cancel claim 8.

1 ~~9.~~ (Amended) A method as in claim ~~8~~, where the tooth positions  
2 defined by the cavities in each successive appliance differ from those defined by the prior  
3 appliance by no more than 2 mm.

1 ~~10.~~ (As filed) A method as in claim 7, wherein the successively placing step comprises  
2 placing at least two additional appliances prior to placing the final appliance.

1 11. (As filed) A method as in claim 10, wherein the successively placing step comprises  
2 placing at least ten additional appliances.

1 12. (As filed) A method as in claim 11, wherein the successively placing step comprises  
2 placing at least twenty-five additional appliances.

1 13. (As filed) A method as in claim 7, wherein the appliances are successively replaced at  
2 an interval in the range from 2 days to 20 days.

1 ~~14.~~ (Amended) An improved method for repositioning teeth using  
2 appliances comprising polymeric shells having cavities shaped to receive and resiliently  
3 reposition teeth to produce a final tooth arrangement, wherein the improvement comprises  
4 determining at the outset of treatment geometries for at least three appliances which are to be  
5 worn successively by a patient to reposition teeth from an initial tooth arrangement to the final  
6 tooth arrangement, wherein the cavities of successive shells have different geometries.

1 15. (As filed) An improved method as in claim 14, wherein at least four geometries  
2 determined at the outset.

1 16. (As filed) An improved method as in claim 15, wherein at least ten geometries are  
2 determined at the outset.

1 17. (As filed) An improved method as in claim 16, wherein at least twenty-five geometries  
2 are determined at the outset.

16-18. (Amended) An improved method as in claim ~~14~~<sup>12</sup>, wherein the tooth positions defined by the cavities in each successive appliance **[geometry]** differ from those defined by the prior appliance **[geometry]** by no more than 2 mm.

Please cancel claims 19-44.

Please add new claims 45-57.

17-45. (New) A system for repositioning teeth from an initial tooth arrangement to a final tooth arrangement, said system comprising a plurality of dental incremental position adjustment appliances including:  
a first appliance having a geometry selected to reposition the teeth from the initial tooth arrangement to a first intermediate arrangement;  
one or more intermediate appliances having geometries selected to progressively reposition the teeth from the first intermediate arrangement to successive intermediate arrangements; and  
a final appliance having a geometry selected to progressively reposition the teeth from the last intermediate arrangement to the final tooth arrangement, wherein the appliances comprise polymeric shells having cavities shaped to receive and resiliently reposition teeth from one arrangement to a successive arrangement and wherein the tooth positions defined by the cavities in each successive appliance differ from those defined by the prior appliance by no more than 2 mm.

18-46. (New) A system as in claim ~~45~~<sup>17</sup>, comprising at least two intermediate appliances.

19-47. (New) A system as in claim ~~46~~<sup>18</sup>, comprising at least ten intermediate appliances.

20-48. (New) A system as in claim ~~47~~<sup>19</sup>, comprising at least twenty-five intermediate appliances.

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49. (New) A method for repositioning teeth from an initial tooth arrangement to a final tooth arrangement, said method comprising:  
placing a first incremental position adjustment appliance in a patient's mouth, wherein the first appliance has a geometry selected to reposition the teeth from the initial tooth arrangement to a first intermediate arrangement;  
successively replacing one or more additional appliances, wherein the additional appliances have geometries selected to progressively reposition the teeth from the first intermediate arrangement to successive intermediate arrangements; and  
placing a final appliance into the patient's mouth, wherein the final appliance has a geometry selected to progressively reposition the teeth from the last intermediate arrangement to the final tooth arrangement, wherein the appliances comprise polymeric shells having cavities shaped to receive and resiliently reposition teeth from one arrangement to a successive arrangement, and wherein the tooth positions defined by the cavities in each successive appliance differ from those defined by the prior appliance by no more than 2 mm.

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50. (New) A method as in claim 49, wherein the successively placing step comprises placing at least two additional appliances prior to placing the final appliance.

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51. (New) A method as in claim 50, wherein the successively placing step comprises placing at least ten additional appliances.

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52. (New) A method as in claim 51, wherein the successively placing step comprises placing at least twenty-five additional appliances.

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53. (New) A method as in claim 49, wherein the appliances are successively replaced at an interval in the range from 2 days to 20 days.

26  
54. (New) An improved method for repositioning teeth using appliances comprising polymeric shells having cavities shaped to receive and resiliently reposition teeth to produce a final tooth arrangement, wherein the improvement comprises determining at the outset of treatment geometries for at least three appliances which are to be worn successively by a patient to reposition teeth from an initial tooth arrangement to the final tooth arrangement,